



Demographic Study

for the

Bethlehem Township School District

November 2020

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Executive Summary

Statistical Forecasting LLC (“Statistical Forecasting”) completed a demographic study for the Bethlehem Township School District, projecting grade-by-grade enrollments from 2021-22 through 2025-26, a five-year period. In addition, the following tasks were completed:

- analyzed community population trends and age structure, demographic characteristics, birth counts, and fertility rates,
- examined historical enrollment trends, both districtwide and by grade configuration,
- compared building capacities to actual and projected enrollments, and
- researched new housing starts and the impact on the school district.

Community Overview

In 2019, Bethlehem Township (“Bethlehem”) was estimated to have 3,854 residents, which is a loss of 125 persons from the 2010 Census. From 1940-2010, Bethlehem’s population quintupled, with its greatest gain occurring in the 1970s (+119.9%) when the population more than doubled.

Regarding race, Whites are the largest race in the township. In the 2014-2018 American Community Survey (“ACS”), Bethlehem was 94.0% White as compared to 92.2% in 2010, which is a gain of 1.8 percentage points. Hispanics were the second-largest race at 3.1% in the 2014-2018 ACS.

With respect to nativity, 6.1% of Bethlehem residents are foreign-born, which is much lower than that of New Jersey (22.8%). China and Poland are the largest sources, accounting for 22.4% and 13.5%, respectively, of the township’s foreign-born population.

Historical Enrollment Trends

Historical enrollments were analyzed from 2011-12 through 2020-21, a ten-year period. In general, enrollments have been declining over the last decade. In 2020-21, enrollment (PK-8) is 330, which is a loss of 153 students (-31.7%) from the 2011-12 enrollment of 483.

While the district recently switched to a PK-6 and 7-8 grade configuration in 2020-21, the former grade configuration (PK-5 and 6-8) is used instead for the purpose of comparing enrollments over time. For grades PK-5, enrollments steadily declined through 2016-17 before stabilizing. In 2020-21, enrollment is 213, which is a loss of 71 students from the 2011-12 enrollment of 284.

For grades 6-8, enrollments have been declining, in general, over the last decade. In 2020-21, enrollment is 117, which is a loss of 82 students from the 2011-12 enrollment of 199.

Kindergarten Replacements

Kindergarten replacements were analyzed to determine whether there was any relationship between overall enrollment change and kindergarten replacement, which is the numerical difference between the number of graduating 8th graders and the number of entering kindergarten students. The district has experienced negative kindergarten replacement in each of the last nine years, ranging from 11-52 students per year. Negative kindergarten replacement occurs when the number of graduating 8th grade students is larger than the number of kindergarten students replacing them in the next year. In the last five years, the district has lost an average of 22 students per year due to kindergarten replacement. In eight of the last nine instances when negative kindergarten replacement occurred, the district's losses due to negative kindergarten replacement were partially offset (or totally, resulting in a net enrollment gain) by a net inward migration of students in the other grades (K to 1, 1 to 2, 2 to 3, etc.). The exception occurred in 2020-21 when the negative kindergarten replacement was compounded by outward migration, which may be related to the coronavirus pandemic.

Birth Counts

The number of births from 2006-2019 in Bethlehem was used to project kindergarten enrollments five years later. Births declined from a high of 35 in 2006 to a low of 17 in 2013 before reversing trend. Since then, the number of births has slowly increased. In 2019, there were 33 births, which is the highest number since 2007.

Regarding fertility rates, the fertility rate in Bethlehem is lower than the rate of both Hunterdon County and the State of New Jersey.

Age Distributions

Age-sex diagrams from the 2010 Census and the 2014-2018 ACS were created for Bethlehem to show the percentage of males and females in each age class. In 2010, the largest number of individuals was aged 50-54 for both males and females. As these individuals advance in age, the largest cohort in the 2014-2018 ACS was aged 55-59 for males yet remained 50-54 for females. The greatest declines over this time period, both in number and percentage points, occurred in the 45-49 age group for females and the 5-9 age group for males, which corresponds approximately with children in grades K-4. The age 5-19 group, which predominantly includes schoolchildren, has declined rather significantly during this time period. The greatest gains, both in number and percentage points, occurred in the 55-59 age group for both genders.

Potential New Housing

Bethlehem municipal representatives provided information regarding current and future residential development in the community. There are no residential developments under construction, nor are there development applications before the planning board. Residential construction is limited in the township as there are 12,146 acres in the Highlands Preservation Area that are protected under the Highlands Water Protection and Planning Act.

Home Sales

Home sales in Bethlehem were analyzed from 1989-2019. Sales peaked at 85 in 2004 before declining to 23 in 2012 due to the housing market crash and banking crisis. Since then, home sales have steadily increased. However, the number of sales in 2019 (67) is still below the peak total that occurred in 2004.

Enrollment Projections

In two separate projections, enrollments were calculated from the 2021-22 school year through the 2025-26 school year, a five-year period. In the first projection, enrollments (PK-8) are projected to be fairly stable throughout the projection period, ranging from 342-346. In the second projection, enrollments are projected to slowly increase throughout the projection period. Enrollment is projected to be 354 in 2025-26, which would be a gain of 24 students from the 2020-21 enrollment of 330.

For grades PK-6 at Thomas B. Conley Elementary School (“Conley”), enrollment is projected to slowly increase throughout the projection period. In the first projection, enrollment is projected to be 278 in 2025-26, which would be a gain of 27 students from the 2020-21 enrollment of 251. In the second projection, enrollment is projected to be 290 in 2025-26, which would be a gain of 39 students from the 2020-21 enrollment.

For grades 7-8 at Ethel Hoppock Middle School (“Hoppock”), enrollment is projected to be fairly stable for the first four years of the projection period before declining in the last year. In the first projection, enrollment is projected to be 66 in 2025-26, which would represent a loss of 13 students from the 2020-21 enrollment of 79. In the second projection, enrollment is projected to be 64 in 2025-26, which would be a loss of 15 students from the 2020-21 enrollment.

Building Capacities

The capacities of the schools in the district were compared to the current enrollments in 2020-21 and the enrollment projections in the 2025-26 school year. As the district plans to close Hoppock and construct 11 additional classrooms at Conley, it is estimated that there will be an additional 231 seats in the building, raising its capacity to 558. Using the building capacities, the differences between capacity and current/projected number of students were computed. Positive values indicate available extra seating while negative values indicate inadequate seating (also known as “unhoused students”). It should be noted that the capacity values are not fixed and can change from year-to-year based on classroom usage. For instance, additional special education classes in a building would reduce the building capacity. On the other hand, districts with unhoused students can accommodate these children by increasing class sizes, which in turn increases the school’s capacity. As such, the capacity of a school is not a fixed value and can be changed depending on how the building is used. At Conley and Hoppock, there is currently a surplus of seating, with the largest being at Hoppock (+232). By 2025-26, with Hoppock assumed to be closed, it is anticipated that there will be 204 surplus seats at Conley assuming the building additions have been completed.

Final Thoughts

While enrollments have declined in the Bethlehem Township School District for the last decade, it appears a change in trend is on the horizon due to an increase in the number of births in the township and an inward migration of students. The recent increase in the number of home sales has likely led to an increase in the number of families with children, particularly in the lower elementary grades, moving into the community, as parents desire to have their children educated in a highly-rated and excellent school district. The inward migration is evident in the cohort survival ratios, as nearly all of the grade progressions are showing an influx of children from one year to the next. The effects of the increasing birth rate and inward migration can already be seen at Conley, whose enrollment has stabilized in the last four years after a period of decline. Enrollments are projected to increase in the school as the larger kindergarten classes enter the system. Despite the increase, if the district decides to close Hoppock, Conley would be able to accommodate all children in the school district provided that the proposed building additions at the elementary school are completed.

Unlike many school districts across the state and metropolitan area, the district's enrollments in 2020-21 do not appear to be adversely affected by the coronavirus. In some school districts, many parents are reluctant to send their child to school or may seek private schools that have full in-person learning rather than hybrid or remote instruction.

In closing, it is difficult to measure the impact of the coronavirus on the school district's enrollments moving forward. In the short-term, the coronavirus may have a negative impact on the local economy, new home construction, and rentals, which could lead to outward migration of families with children. In a recent New York Times article¹, families with financial means are leaving large metropolitan areas to reside in their second homes in rural COVID-free areas or are purchasing an existing home in these new locations. These individuals can typically work remotely and are seeking to escape the pandemic. It is not clear whether these households will permanently reside in these locations or return to urban centers once an effective vaccine is found and widely implemented. Enrollment in some districts is affected by whether they are currently having in-person or remote instruction. Some parents are pulling their children out of existing districts and seeking schools for their children that provide in-person instruction in favor of those offering hybrid or solely online instruction². In particular, parents are seeking schools that have in-person learning for children in both pre-kindergarten and kindergarten³. While the duration of the pandemic is unknown and available data is limited, we are continuing to monitor data as it becomes available to assess its future impact on enrollments both short- and long-term.

¹ (<https://www.nytimes.com/2020/09/26/us/coronavirus-vermont-transplants.html>)

² <https://www.npr.org/2020/10/09/920316481/enrollment-is-dropping-in-public-schools-around-the-country>

³ *ibid.*

Introduction

Statistical Forecasting LLC (“Statistical Forecasting”) completed a demographic study for the Bethlehem Township School District, projecting grade-by-grade enrollments from 2021-22 through 2025-26, a five-year period. In addition, the following tasks were completed:

- analyzed community population trends and age structure, demographic characteristics, birth counts, and fertility rates,
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- researched new housing starts and the impact on the school district.

Population Trends in Bethlehem Township

Located in Hunterdon County, Bethlehem Township (“Bethlehem”) contains a land area of 20.71 square miles, with an additional 0.12 square miles of water area. In the 2010 Census, Bethlehem had 3,979 residents, which is 192.1 persons per square mile. Historical and projected populations for Bethlehem from 1940-2040 are shown in Table 1 and Figure 1. From 1940-2010, Bethlehem’s population quintupled, with its greatest gain occurring in the 1970s (+119.9%) when the population more than doubled.

Table 1
Historical and Projected Populations for Bethlehem Township
1940-2040

Year	Population	Percent Change
Historical¹		
1940	791	N/A
1950	857	+8.3%
1960	1,090	+27.2%
1970	1,385	+27.1%
1980	3,045	+119.9%
1990	3,104	+1.9%
2000	3,820	+23.1%
2010	3,979	+4.2%
2019 (est.)	3,854	-3.1%
Projected²		
2020	4,256	+10.4%
2030	4,544	+6.8%
2040	4,913	+8.1%

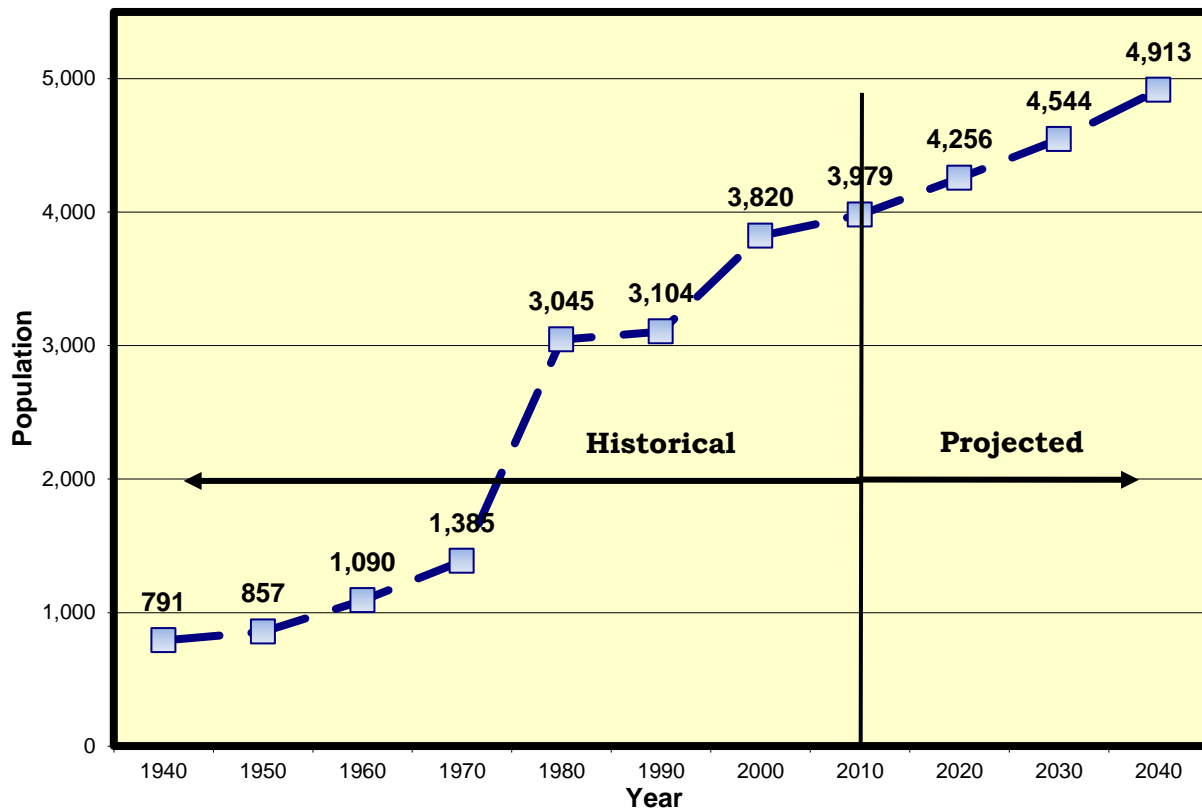
Sources: ¹United States Census Bureau

²North Jersey Transportation Planning Authority, Inc. (2013)

In addition, a population estimate for 2019 is provided in Table 1. The estimated population in 2019 is 3,854, which is a loss of 125 persons from 2010. The Census Bureau publishes estimates every July 1st following the last decennial census and are computed using the decennial census base counts, number of births and deaths in a community, and migration data (both domestic and international).

Population projections from 2020-2040, which were prepared by the North Jersey Transportation Planning Authority (“NJTPA”), indicate that the population will increase. However, as the 2019 Census estimate reflects a change in trend and a decline in population since 2010, the NJTPA likely needs to revise its projections after the 2020 Census results become available. As it currently stands, forecasts project the population to be 4,913 in 2040, which would be a 27.5% increase from the 2019 population estimate and a gain of 1,059 persons.

Figure 1
Historical and Projected Populations for Bethlehem Township
1940-2040



Bethlehem Township Demographic Profile

In Table 2, selected demographic characteristics of Bethlehem are compared from the 2010 Census and the 2006-2010 and 2014-2018 American Community Surveys (“ACS”). While some Census variables account for everyone in the population (e.g., age and race), other variables are collected from a sample (e.g., median family income, educational attainment, poverty status, etc.). The ACS replaced the long form of the Census, last administered in 2000 to approximately 16% of the population in the United States. For communities with small populations such as Bethlehem, ACS data represent a sample collected over a five-year time period, where the estimates represent the average characteristics between January 2014 and December 2018, for example. This information does not represent a single point in time like the long form of earlier Censuses. The five-year ACS contains 1% annual samples from all households and persons from 2014 to 2018, resulting in a 5% sample of the population. Due to the small sample size, the sampling error is quite large, which increases the degree of uncertainty of the estimated values. Therefore, the forthcoming ACS data should be interpreted with caution.

With respect to race, Whites are the largest race in Bethlehem. In the 2014-2018 ACS, Bethlehem was 94.0% White as compared to 92.2% in 2010, which is a gain of 1.8 percentage points. Hispanics were the second-largest race at 3.1% in the 2014-2018 ACS, which is slightly lower than its 2010 percentage (4.0%). In general, the racial distribution has not changed significantly over this time period.

Regarding nativity, 6.1% of Bethlehem residents were foreign-born in the 2014-2018 ACS, which is a gain of 1.7 percentage points from the 2006-2010 ACS percentage (4.4%). As a point of comparison, New Jersey’s foreign-born resident percentage was 22.8% in the 2014-2018 ACS, which is much higher than Bethlehem’s. While not shown in the table, place of birth, which serves as a proxy for country of origin, indicates that Germany and Poland were the largest sources of immigrants in the 2006-2010 ACS, accounting for 20.1% and 17.8%, respectively, of the foreign-born population. In the 2014-2018 ACS, China is now the largest source, accounting for 22.4% of the foreign-born population. Poland remains the second-largest source at 13.5%.

The median age in Bethlehem has increased from 44.2 years in 2010 to 48.3 years in the 2014-2018 ACS, which is significantly higher than the median age in New Jersey (40.0 years). During the same time period, the percentage of people under the age of 18 years, which corresponds predominantly to school-age children, declined sharply from 27.6% to 22.8%.

Regarding educational attainment for adults aged 25 and over, 54.1% of the population had a bachelor’s degree or higher in the 2014-2018 ACS as compared to 46.7% in the 2006-2010 ACS, which is a gain of 7.4 percentage points. Bethlehem is a highly-educated population, as its percentage of persons having a bachelor’s degree or higher is greater than that of New Jersey (40.8%). Persons with graduate or professional degrees declined slightly from 20.0% to 19.6% during this time period.

Table 2
Selected Demographic Characteristics of Bethlehem Township

Race Origin¹	2006-2010 ACS 2010 Census	2014-2018 ACS
White	92.2%	94.0%
Black or African American	1.0%	0.0%
Hispanic or Latino	4.0%	3.1%
American Indian and Alaska Native	0.1%	0.0%
Asian	1.9%	2.6%
Native Hawaiian and Other Pacific Islander	0.0%	0.0%
Other Race	0.1%	0.0%
Two or more Races	0.7%	0.3%
Total	100.0%	100.0%
Place of Birth		
Foreign-Born	4.4%	6.1%
Age		
Under 18	27.6%	22.8%
18-64	62.7%	63.6%
65 and over	9.7%	13.6%
Median age	44.2 years	48.3 years
Educational Attainment		
Bachelor's degree or higher	46.7%	54.1%
Graduate or professional degree	20.0%	19.6%
Income		
Median family income	\$130,580	\$171,250
Percentage of Persons in Poverty ages 5-17	0.7%	0.0%
Housing Units		
Total number	1,386 ²	1,597
Occupied units	1,344 (97.0%)	1,508 (94.4%)
Owner-occupied units	1,280 (95.2%)	1,409 (93.4%)
Renter-occupied units	64 (4.8%)	99 (6.6%)
Median value of an owner-occupied unit	\$476,900	\$398,700
Average household size	2.96	2.59
Housing Type¹		
Total number	1,403 ²	1,597
1-unit, attached or detached	1,403 (100.0%)	1,586 (99.3%)
Two units	0 (0.0%)	0 (0.0%)
Three or four units	0 (0.0%)	11(0.7%)
Five to nine units	0 (0.0%)	0 (0.0%)
10 to 19 units	0 (0.0%)	0 (0.0%)
20 or more units	0 (0.0%)	0 (0.0%)
Mobile home	0 (0.0%)	0 (0.0%)

Sources: American Community Survey (2006-2010 and 2014-2018), United States Census (2010)

Notes: ¹Data may not sum to 100.0% due to rounding.

²Total number differs as Housing Units are from the 2010 Census while Housing Type data are from the 2006-2010 ACS.

Median family income increased from \$130,580 in the 2006-2010 ACS to \$171,250 in the 2014-2018 ACS, a gain of 31.1%. By comparison, median family income in New Jersey is \$101,404, which is much lower than that of Bethlehem. During this time period, the percentage of school-age children (5-17) that are in poverty declined from 0.7% to 0.0%.

Regarding housing, there were 1,597 housing units in Bethlehem in the 2014-2018 ACS, which is a gain of 211 units (+15.2%) from 2010. Over this time period, the overall occupancy rate declined from 97.0% to 94.4%, while the average household size sharply declined from 2.96 to 2.59 persons. Renter-occupied units accounted for only 6.6% of the occupied units in the 2014-2018 ACS, which is a gain of 1.8 percentage points from the 2010 percentage (4.8%). As a point of comparison, the percentage of renter-occupied units in Bethlehem is much lower than that of New Jersey (36.0%). Finally, the median home price of an owner-occupied unit in the 2014-2018 ACS was \$398,700, which is a 16.4% decline from the value reported in the 2006-2010 ACS (\$476,900).

With respect to housing type, nearly all (99.3%) of the homes in the 2014-2018 ACS were one-unit, either attached or detached, which is nearly unchanged from the 2006-2010 ACS percentage (100.0%). In general, there has been little change in the housing distribution since the 2006-2010 ACS.

District Overview

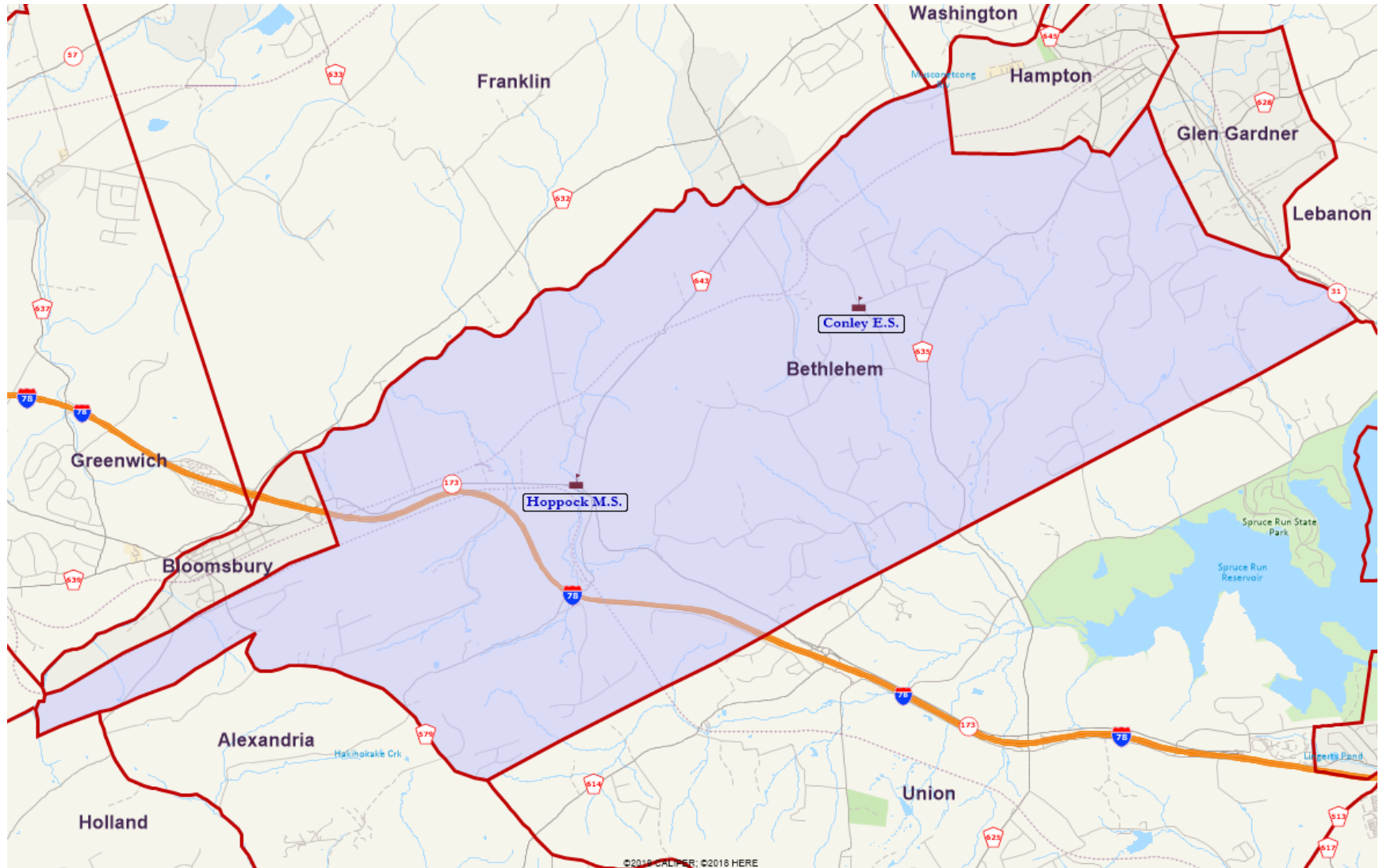
The Bethlehem Township School District has two (2) schools that serve grades pre-kindergarten through eighth. Children attend Thomas B. Conley Elementary School (“Conley”) for grades PK-6 and Ethel Hoppock Middle School (“Hoppock”) for grades 7-8. Prior to 2020-21, the district utilized a PK-5 and 6-8 grade configuration. In Figure 2, the location of each of the district’s schools is shown with respect to the municipal boundaries.

According to the district’s architect⁴, total educational capacity in the district is 638 students using Facilities Efficiency Standards (“FES”) methodology. Since buildings cannot be 100% utilized, due in part to scheduling conflicts, most districts employ either an 85% or 90% utilization factor to determine school capacity. A comparison of each school’s capacity to current and projected enrollments is provided later in the report.

In this study, historical enrollments from the New Jersey Department of Education (“NJDOE”) New Jersey Standards Measurement and Resource for Teaching (“NJ SMART”) database were used to project enrollments five years into the future using the Cohort-Survival Ratio method.

⁴ Design Resources Group Architects, AIA, Inc.

Figure 2
School Locations – Bethlehem Township School District



Explanation of the Cohort-Survival Ratio Method

In 1930, Dublin and Lodka provided an explicit age breakdown, which enabled analysts to follow each cohort through its life stages and apply appropriate birth and death rates for each generation. A descendant of this process is the Cohort-Survival Ratio (“CSR”) method, which is the NJDOE-approved methodology to project public school enrollments. In this method, a survival ratio is computed for each grade progression, which essentially compares the number of students in a particular grade to the number of students in the previous grade during the previous year. The survival ratio indicates whether the enrollment is stable, increasing, or decreasing. A survival ratio of 1.00 indicates stable enrollment, less than 1.00 indicates declining enrollment, while greater than 1.00 indicates increasing enrollment. If, for example, a school district had 100 fourth graders and the next year had 95 fifth graders, the survival ratio would be 0.95.

The CSR method assumes that what happened in the past will also happen in the future. In essence, this method provides a linear projection of the population. The CSR method is most applicable for districts that have relatively stable increasing or decreasing trends without any major unpredictable fluctuations from year to year. In school districts encountering rapid growth not experienced historically (a change in the historical trend), the CSR method must be modified and supplemented with additional information. In this study, survival ratios were calculated using historical data for birth to kindergarten, kindergarten to first grade, first grade to second grade, etc. Due to the fluctuation in survival ratios from year to year, it is appropriate to calculate an average survival ratio, which is then used to calculate grade-level enrollments five years into the future.

Historical Enrollment Trends

Historical enrollments for the Bethlehem Township School District from 2011-12 through 2020-21, a ten-year period, are shown in Figure 3 and Table 3. In general, enrollments have been declining over the last decade. In 2020-21, enrollment is 330, which is a loss of 153 students (-31.7%) from the 2011-12 enrollment of 483.

Figure 3
Bethlehem Township School District Historical Enrollments
2011-12 to 2020-21

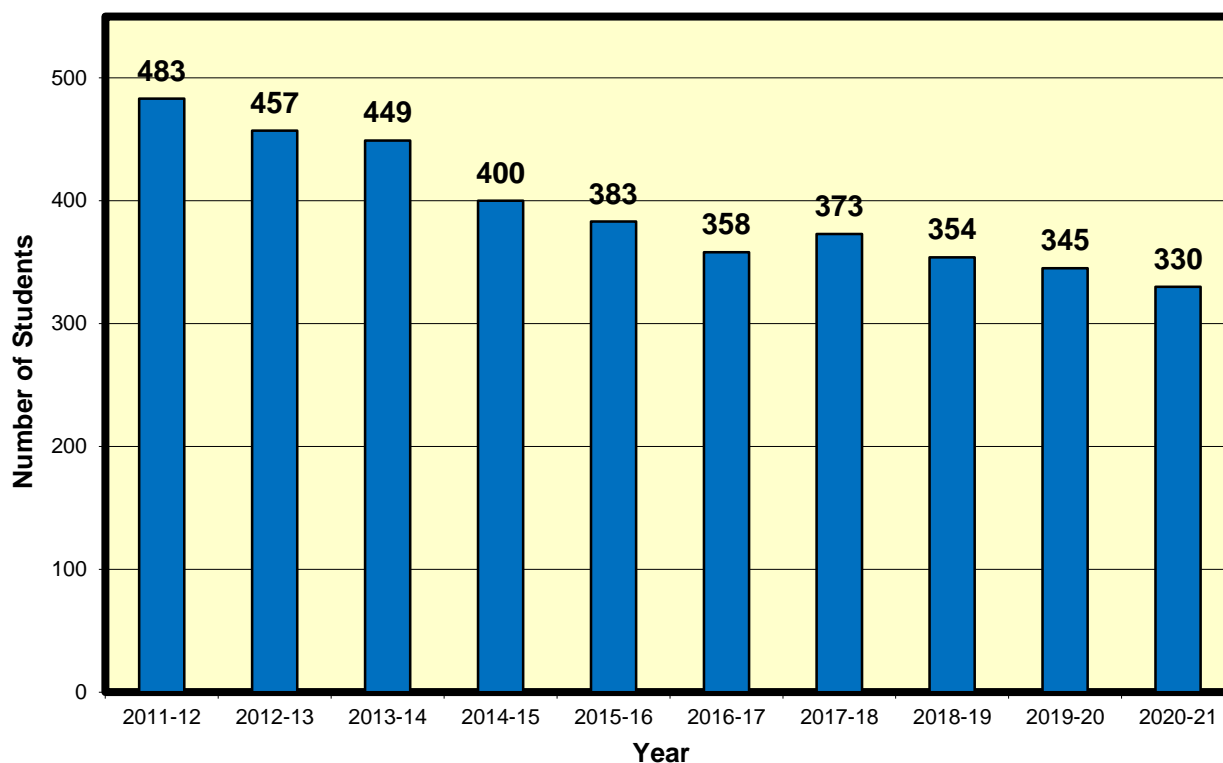


Table 4 shows computed grade-by-grade survival ratios from 2011-12 to 2020-21. In addition, the average, minimum, and maximum survival ratios are shown for the past ten years along with the five- and six-year averages, which were used to project enrollments. The average survival ratios also indicate the net migration by grade, where values over 1.000 reflect net inward migration and values below 1.000 reflect net outward migration. Seven of the nine average survival ratios (five-year average) were above 1.000, indicating a net inward migration of students. In comparing the five-year averages with the ten-year averages, the most notable differences were for birth to kindergarten and kindergarten to first grade, which have experienced an increase and decline in their respective ratios in the near term. The increase in the average birth-to-kindergarten ratio is likely due to the district's change from a half-day to a full-day kindergarten program in 2012-13. The decline in the kindergarten-to-first grade ratio is likely due to fewer parents enrolling their children in first grade since the full-day kindergarten program was instituted. The remaining differences were very small, demonstrating the long-term stability of the survival ratios over the last decade.

Table 3
Bethlehem Township School District Historical Enrollments
2011-12 to 2020-21

Year ¹	PK RE ²	K	1	2	3	4	5	6	7	8	SE ³	PK-5 Total	6-8 Total	PK-8 Total
2011-12	1	32	37	44	50	53	67	79	46	74	0	284	199	483
2012-13	1	32	35	42	55	50	55	64	78	44	1	271	186	457
2013-14	2	28	33	34	41	56	51	57	65	82	0	245	204	449
2014-15	0	30	31	29	34	43	54	52	59	63	5	226	174	400
2015-16	0	40	35	35	29	38	42	53	52	57	2	221	162	383
2016-17	0	30	35	36	37	29	41	42	55	53	0	208	150	358
2017-18	7	33	33	38	36	42	30	46	42	58	8	226	147	373
2018-19	17	22	35	37	37	40	42	32	46	43	3	233	121	354
2019-20	22	27	20	36	39	38	39	40	34	43	7	228	117	345
2020-21	13	32	25	21	33	41	42	38	43	36	6	213	117	330

Notes: ¹Data were provided by the New Jersey Department of Education (<http://www.nj.gov/education/data/enr/>) and the Bethlehem Township School District

²Pre-kindergarten regular education enrollment

³Self-contained special education enrollment/ungraded students. Also includes pre-kindergarten special education students.

Table 4
Bethlehem Township School District Historical Survival Ratios
2011-12 to 2020-21

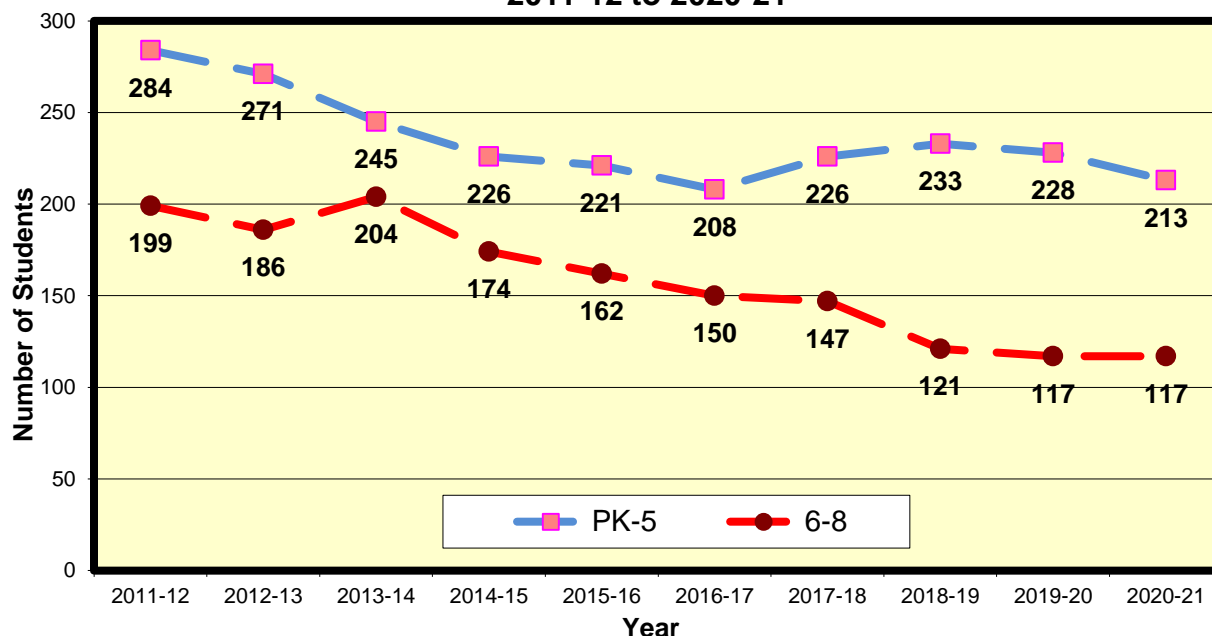
Progression Years	B-K	K-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8
2011-12 to 2012-13	0.9697	1.0938	1.1351	1.2500	1.0000	1.0377	0.9552	0.9873	0.9565
2012-13 to 2013-14	1.1200	1.0313	0.9714	0.9762	1.0182	1.0200	1.0364	1.0156	1.0513
2013-14 to 2014-15	1.2500	1.1071	0.8788	1.0000	1.0488	0.9643	1.0196	1.0351	0.9692
2014-15 to 2015-16	1.4286	1.1667	1.1290	1.0000	1.1176	0.9767	0.9815	1.0000	0.9661
2015-16 to 2016-17	1.3043	0.8750	1.0286	1.0571	1.0000	1.0789	1.0000	1.0377	1.0192
2016-17 to 2017-18	1.5714	1.1000	1.0857	1.0000	1.1351	1.0345	1.1220	1.0000	1.0545
2017-18 to 2018-19	1.2941	1.0606	1.1212	0.9737	1.1111	1.0000	1.0667	1.0000	1.0238
2018-19 to 2019-20	1.0385	0.9091	1.0286	1.0541	1.0270	0.9750	0.9524	1.0625	0.9348
2019-20 to 2020-21	1.2800	0.9259	1.0500	0.9167	1.0513	1.1053	0.9744	1.0750	1.0588
Maximum Ratio	1.5714	1.1667	1.1351	1.2500	1.1351	1.1053	1.1220	1.0750	1.0588
Minimum Ratio	0.9697	0.8750	0.8788	0.9167	1.0000	0.9643	0.9524	0.9873	0.9348
Avg. 5-Year Ratios	1.2977	0.9989	1.0714	0.9861	1.0811	1.0287	1.0288	1.0344	1.0180
Avg. 6-Year Ratios	1.3195	0.9741	1.0628	1.0003	1.0649	1.0387	1.0231	1.0350	1.0182
Avg. 10-Year Ratios	1.2507	1.0299	1.0476	1.0253	1.0566	1.0214	1.0120	1.0237	1.0038
Diff. Between 5-Year and 10-Year Ratios	+0.0469	-0.0310	+0.0238	-0.0392	+0.0246	+0.0073	+0.0168	+0.0107	+0.0142

Factors related to inward migration include families with school-age children purchasing an existing home or new housing unit. The reasons for families moving into a community vary. For instance, a family could move into Bethlehem for economic reasons and proximity to employment. Another plausible reason for inward migration is the reputation of the school district, as the appeal of a school district draws families into a community, resulting in the transfer of students into the district. On the flip side, outward migration is caused by families with children moving out of the community, perhaps due to difficulty in finding employment or affordable housing. Outward migration in the school district can also be caused by parents choosing to withdraw their children from public school to attend private, parochial, or charter schools, or to attend a different public school district. In the case of the Bethlehem Township School District, the reasons for migration are not explicitly known (such as for economic reasons or the appeal of the school district), as exit and entrance interviews would need to be conducted for all children leaving or entering the district.

Historical enrollments are also shown in Table 3 and Figure 4 by grade configuration (PK-5 and 6-8). While the district recently switched to a PK-6 and 7-8 grade configuration in 2020-21, the former grade configuration is used instead for the purpose of comparing enrollments over time. Self-contained special education/ungraded students were incorporated into the totals for each grade configuration. For grades PK-5, enrollments steadily declined through 2016-17 before stabilizing. In 2020-21, enrollment is 213, which is a loss of 71 students from the 2011-12 enrollment of 284.

For grades 6-8, enrollments have been declining, in general, over the last decade. In 2020-21, enrollment is 117, which is a loss of 82 students from the 2011-12 enrollment of 199.

Figure 4
Bethlehem Township School District
Historical Enrollments by Grade Configuration
2011-12 to 2020-21



Kindergarten Replacement

Kindergarten replacements were analyzed to determine whether there was any relationship between overall enrollment change and kindergarten replacement, which is the numerical difference between the number of graduating 8th graders and the number of entering kindergarten students. The district has experienced negative kindergarten replacement in each of the last nine years. Negative kindergarten replacement occurs when the number of graduating 8th grade students is larger than the number of kindergarten students replacing them in the next year. Positive kindergarten replacement occurs when the number of graduating 8th grade students is less than the number of kindergarten students entering the district in the next year. As shown in Figure 5, negative kindergarten replacement has ranged from 11-52 students per year. In 2020-21, there was a loss of 11 students due to kindergarten replacement, as 43 eighth graders graduated in 2019-20 and were replaced by 32 kindergarten students in 2020-21. In the last five years, the district has lost an average of 22 students per year due to kindergarten replacement.

Figure 5
Bethlehem Township School District
Historical Kindergarten Replacement

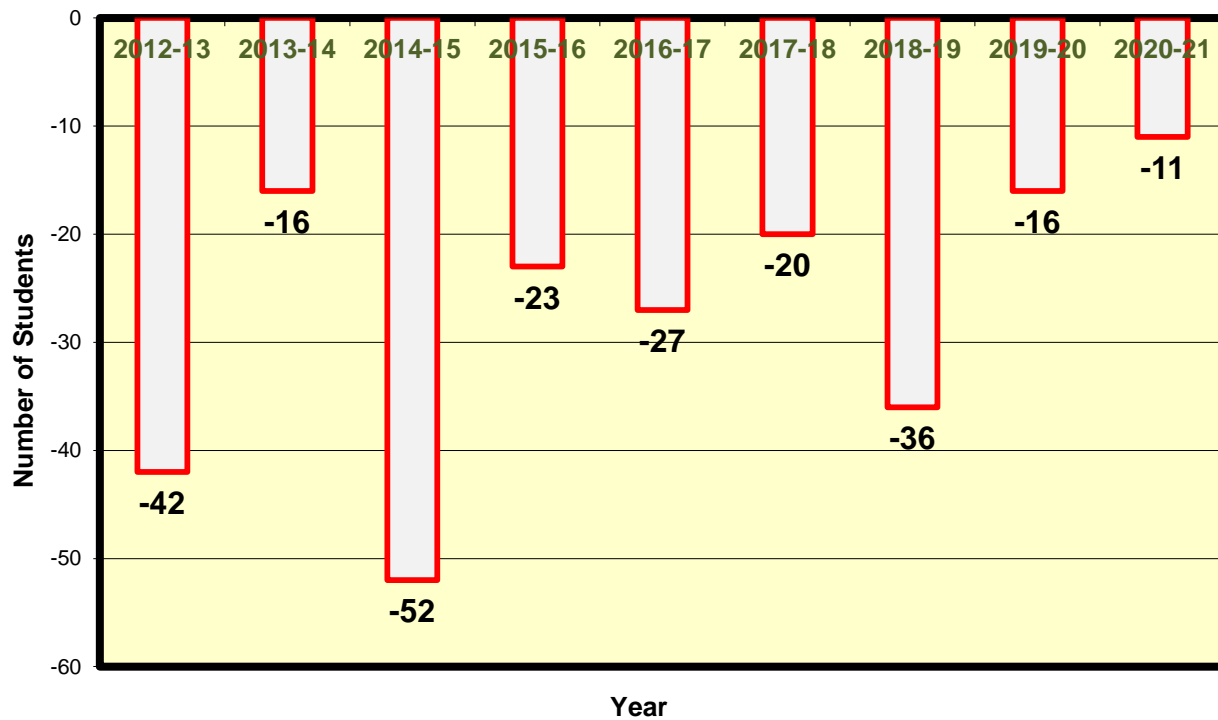
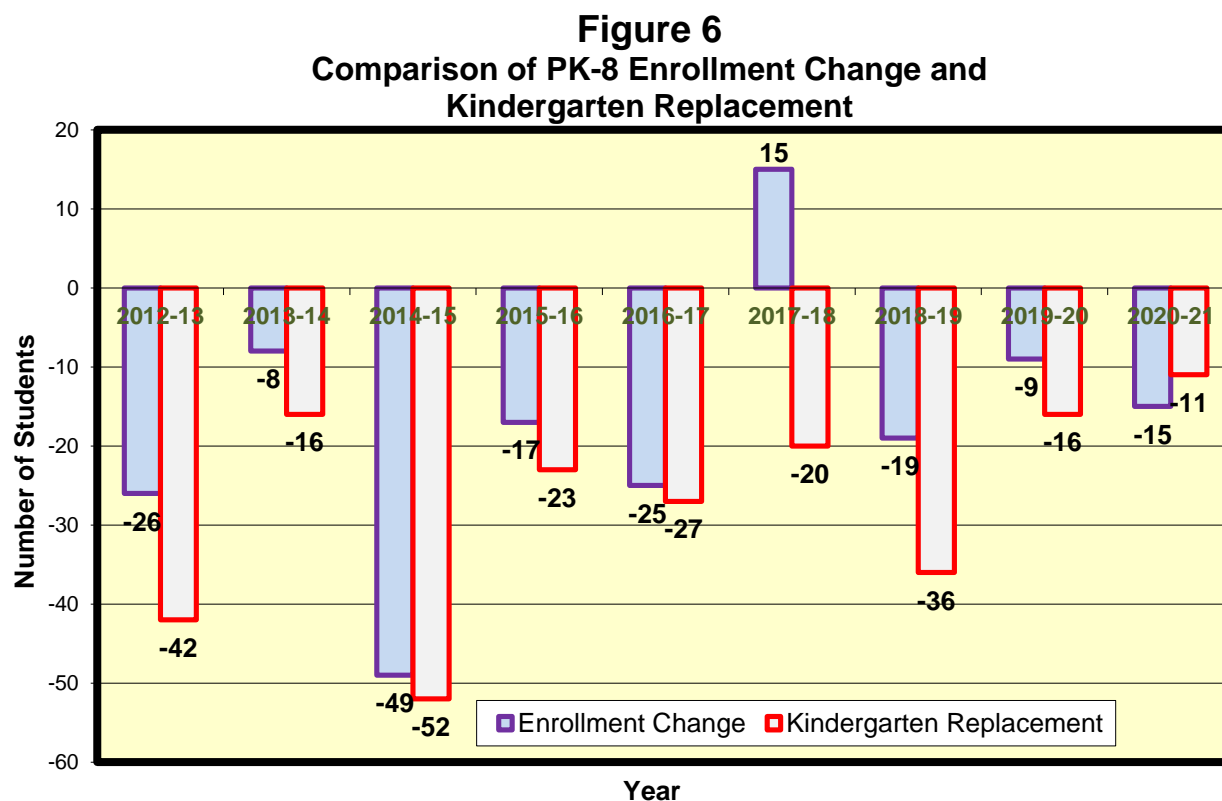


Figure 6 shows the annual change in total enrollment compared to kindergarten replacement. As the figure demonstrates, there appears to be a strong relationship, statistically speaking, between the overall change in enrollment and kindergarten replacement. Although this data represents a small sample, the correlation coefficient between the two variables was 0.746. Correlation coefficients measure the relationship or association between two variables; this does not imply that there is cause and effect between the two variables. Other variables, known as lurking variables, may have an effect on the true relationship between kindergarten replacement and total enrollment change. Negative correlation coefficients indicate that as one variable is increasing (decreasing), the other variable is decreasing (increasing). Positive correlation coefficients indicate that as one of the variables increases (decreases), the other variable increases (decreases) as well. The computed linear correlation coefficient is always between -1 and +1. Values near -1 or +1 indicate a strong linear relationship between the variables while values near zero indicate a weak linear relationship. Based on the correlation of 0.746 there appears to be a strong relationship between enrollment change and kindergarten replacement in the school district in the last nine years.

In eight of the last nine instances when negative kindergarten replacement occurred, the district's losses due to negative kindergarten replacement were partially offset (or totally, resulting in a net enrollment gain) by a net inward migration of students in the other grades (K to 1, 1 to 2, 2 to 3, etc.). This was confirmed previously as seven of the nine average survival ratios in the five-year trend were above 1.000. The exception occurred in 2020-21 when the negative kindergarten replacement was compounded by outward migration, which may be related to the coronavirus pandemic.



Birth Data

Birth data were needed to compute kindergarten enrollments, which were calculated as follows. Birth data, which are lagged five years behind their respective kindergarten classes, were used to calculate the survival ratio for each birth-to-kindergarten cohort. For instance, in 2015, there were 25 births in Bethlehem. Five years later (the 2020-21 school year), 32 children enrolled in kindergarten, which is equal to a survival ratio of 1.280 from birth to kindergarten. Birth counts and birth-to-kindergarten survival ratios are displayed in Table 5. Values greater than 1.000 indicate that some children are born outside of a community's boundaries and are attending kindergarten in the school district five years later, i.e., an inward migration of children. This type of inward migration is typical in school districts with excellent reputations, because the appeal of a good school district draws families into the community. Inward migration is also seen in communities where there are a large number of new housing starts (or home resales), with families moving into the community having children of age to attend kindergarten. Birth-to-kindergarten survival ratios that are below 1.000 indicate that a number of children born within a community are not attending kindergarten in the school district five years later. This is common in communities where a high proportion of children attend private, parochial, charter, or out-of-district special education facilities, or where there is a net migration of families moving out of the community. It is also common in school districts that have a half-day kindergarten program where parents choose to send their child to a private full-day kindergarten for the first year.

Table 5
Birth Counts and Historical Birth-to-Kindergarten Survival Ratios
Bethlehem Township School District

Birth Year ¹	Number of Births Bethlehem Township	Kindergarten Students 5 Years Later	Birth-to-Kindergarten Survival Ratio
2006	35	32	0.914
2007	33	32	0.970
2008	25	28	1.120
2009	24	30	1.250
2010	28	40	1.429
2011	23	30	1.304
2012	21	33	1.571
2013	17	22	1.294
2014	26	27	1.038
2015	25	32	1.280
2016	30	N/A	N/A
2017	31	N/A	N/A
2018	25	N/A	N/A
2019	33	N/A	N/A

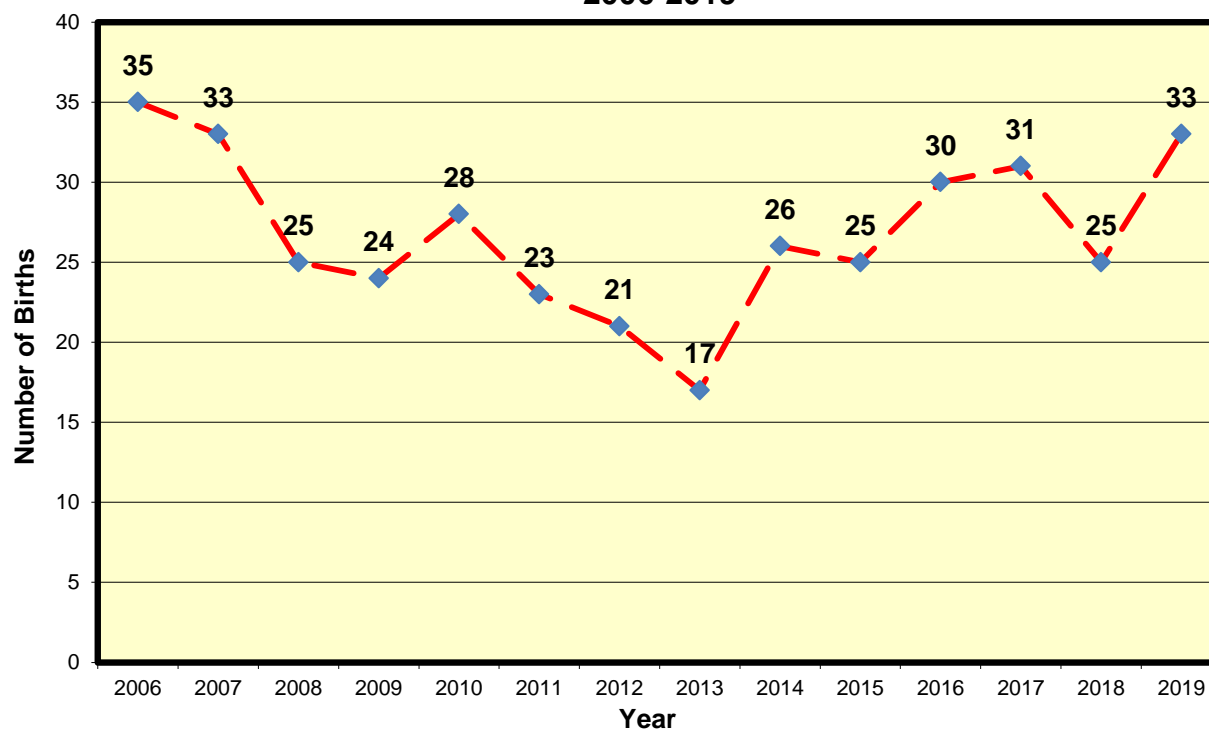
Note: ¹Birth data were provided by the New Jersey Center for Health Statistics from 2006-2019. Blue-shaded area reflects implementation of a full-day kindergarten program

Due to the low number of births and kindergarten students in Bethlehem, birth-to-kindergarten survival ratios have been more susceptible to variability. In eight of the last ten years, birth-to-kindergarten survival ratios have been above 1.000, yet have been inconsistent during this time period, ranging from 0.914-1.571. In 2011-12, the birth-to-kindergarten survival ratio in the district was below 1.000, which is likely due to having a half-day kindergarten program. Full-day kindergarten was implemented in the district beginning in September 2012, which is shaded blue in Table 5. Birth-to-kindergarten ratios slowly increased beginning in 2012 as more parents enrolled their children in the district for full-day kindergarten. As the birth-to-kindergarten survival ratios have been above 1.000 in the last eight years, this indicates that some children who were born in other communities are moving into the township and are enrolling in kindergarten in the Bethlehem Township School District.

Geocoded birth data were provided by the New Jersey Center for Health Statistics (“NJCHS”) from 2006-2019 by assigning geographic coordinates to a birth mother based on her street address. Births for 2019 are provisional while births for 2020 were not yet available. Since the NJCHS did not have birth data for 2020, an estimate was formulated by averaging historical births. Birth counts were needed for 2020 since this cohort will become the kindergarten class of 2025.

As shown in Figure 7, the number of births in Bethlehem declined from a high of 35 in 2006 to a low of 17 in 2013 before reversing trend. Since then, the number of births has slowly increased. In 2019, there were 33 births, which is the highest number since 2007.

Figure 7
Bethlehem Township Historical Birth Counts
2006-2019



The fertility rate in Bethlehem is lower than those of both Hunterdon County and the State of New Jersey. According to the 2014-2018 ACS, the fertility rate of women aged 15 to 50 in Bethlehem was 49 births per 1,000 women. In comparison, as reported by the NJCHS, the 2019 fertility rate in Hunterdon County was 50.0 births per 1,000 women (ages 15-49) and was 59.3 births per 1,000 women in New Jersey. However, it should be noted that while the municipal, county, and state data are all based on a sample, the Bethlehem data has a margin of error that is much higher than the county and state data and may not reflect the “true” fertility rate in the community.

Figures 8 and 9 show the age pyramids of males and females in Bethlehem from both the 2010 Census and the 2014-2018 ACS. In 2010, the largest number of individuals was aged 50-54 for both males and females. As these individuals advance in age, the largest cohort in the 2014-2018 ACS was aged 55-59 for males yet remained 50-54 for females. As shown in Table 6, the greatest declines (shaded red) over this time period, both in number and percentage points, occurred in the 45-49 age group for females and the 5-9 age group for males, which corresponds approximately with children in grades K-4. The age 5-19 group, which predominantly includes schoolchildren, has declined rather significantly during this time period. The greatest gains (shaded blue), both in number and percentage points, occurred in the 55-59 age group for both genders.

Figure 8
Population Pyramid of Bethlehem Township
2010 Census

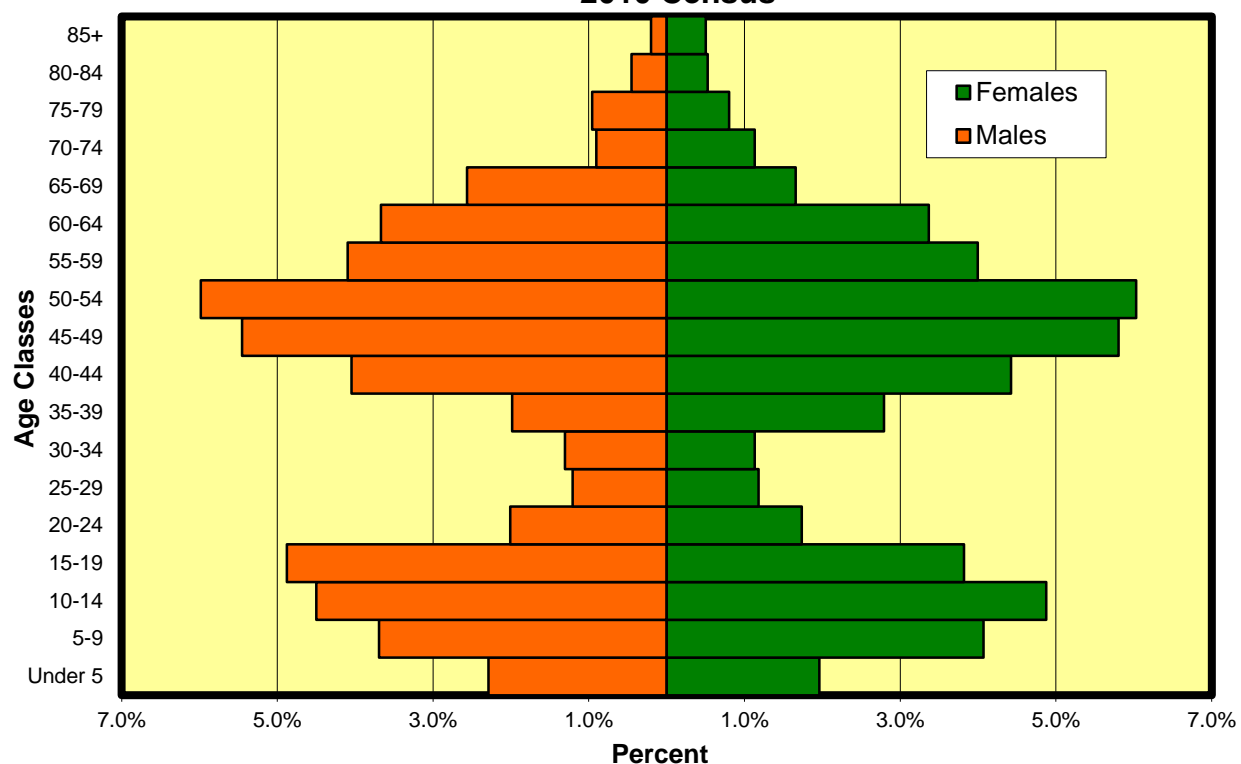


Figure 9
Population Pyramid of Bethlehem Township
2014-2018 ACS

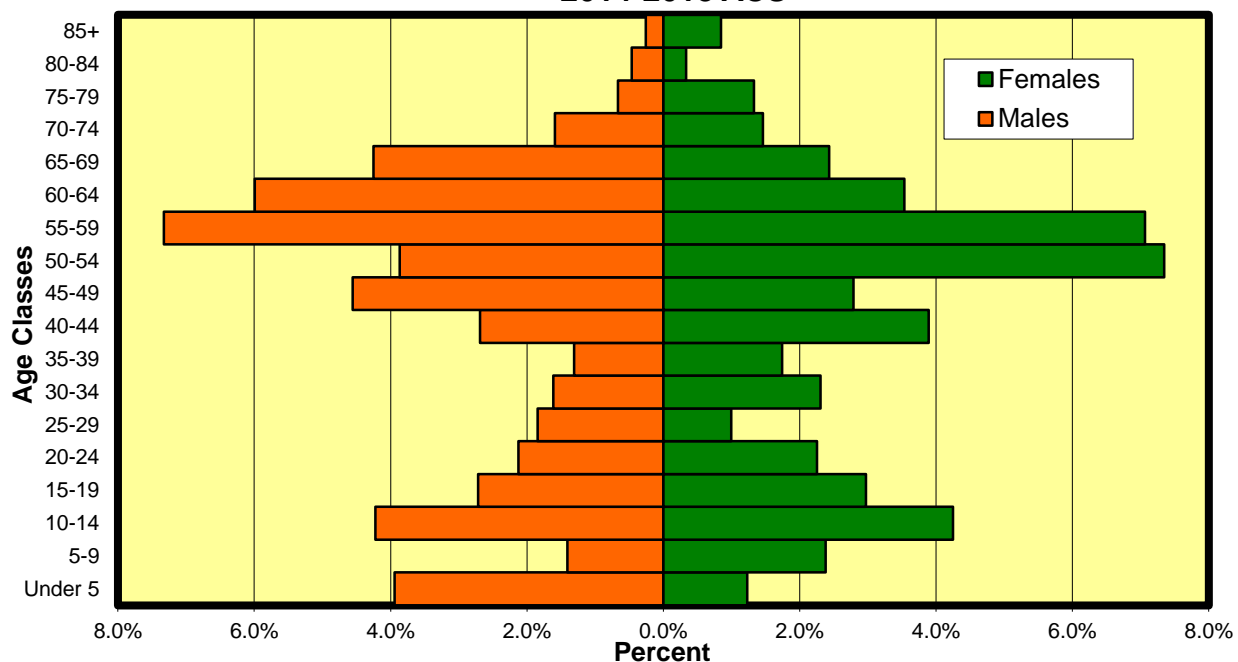


Table 6
Numerical and Percentage Point Changes of Males and Females
Bethlehem Township
2010 Census to 2014-2018 ACS

Age Group	Males		Females	
	Numerical Change	Percentage Point Change	Numerical Change	Percentage Point Change
Under 5	+63	+1.7	-30	-0.7
5-9	-92	-2.3	-69	-1.7
10-14	-14	-0.3	-28	-0.6
15-19	-88	-2.2	-36	-0.8
20-24	+3	+0.1	+19	+0.5
25-29	+24	+0.6	-8	-0.2
30-34	+11	+0.3	+45	+1.2
35-39	-28	-0.7	-43	-1.0
40-44	-56	-1.4	-24	-0.5
45-49	-39	-0.9	-122	-3.0
50-54	-87	-2.1	+47	+1.3
55-59	+123	+3.2	+117	+3.1
60-64	+88	+2.3	+4	+0.2
65-69	+64	+1.7	+29	+0.8
70-74	+26	+0.7	+12	+0.3
75-79	-12	-0.3	+20	+0.5
80-84	+0	0.0	-8	-0.2
85+	+2	+0.1	+13	+0.3

Notes: Cells shaded blue reflect the greatest gains over the ten-year period.

Cells shaded red reflect the greatest losses over the ten-year period.

New Housing in Bethlehem Township

Ms. Mary Knapp, Bethlehem Township Planning Board Secretary, provided information regarding current and future residential development in the community. There are no residential developments under construction, nor are there development applications before the planning board. Residential construction is limited in the township as there are 12,146 acres in the Highlands Preservation Area that are protected under the Highlands Water Protection and Planning Act. As there is no significant residential development planned in Bethlehem, the baseline enrollment projections were not modified to account for any additional children from new housing developments.

Historical Residential Construction

With respect to historical new construction, the number of certificates of occupancy (“COs”) issued for new homes in Bethlehem from 2015-2020 is shown in Table 7. New residential construction has been limited in Bethlehem, as only three (3) COs were issued for single- or two-family homes over this time period. While not shown in the table, a total of three single-family or two-family homes were demolished during the same time period, which results in a net gain of zero new housing units since 2015.

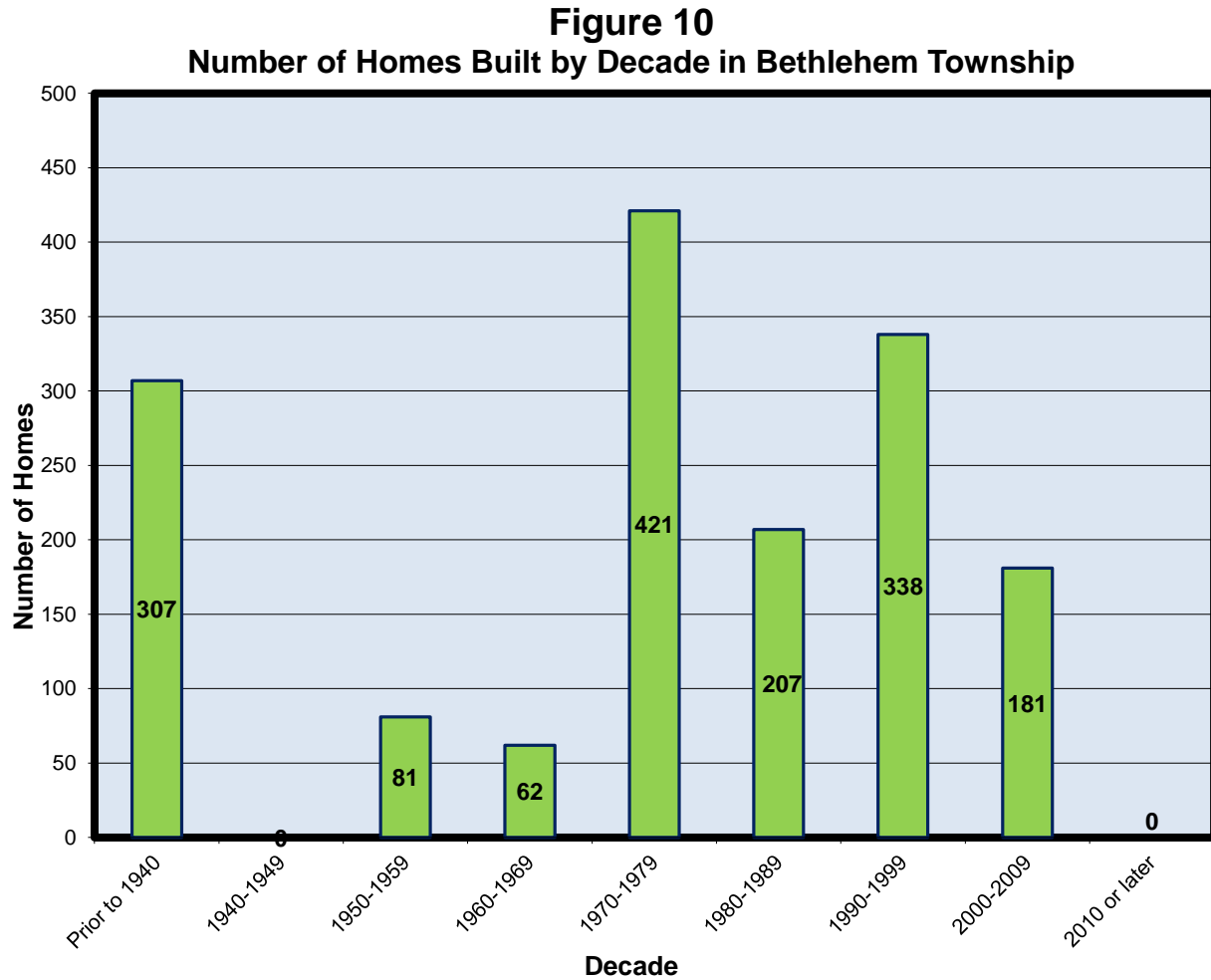
Table 7
Number of Residential Certificates of Occupancy by Year
2015-2020

Year	Bethlehem Township			
	1&2 Family	Multi-Family	Mixed Use	Total
2015	2	0	0	2
2016	0	0	0	0
2017	1	0	0	1
2018	0	0	0	0
2019	0	0	0	0
2020 (through August)	0	0	0	0
Total	3	0	0	3

Source: New Jersey Department of Community Affairs

Distribution of Homes by Decade Built

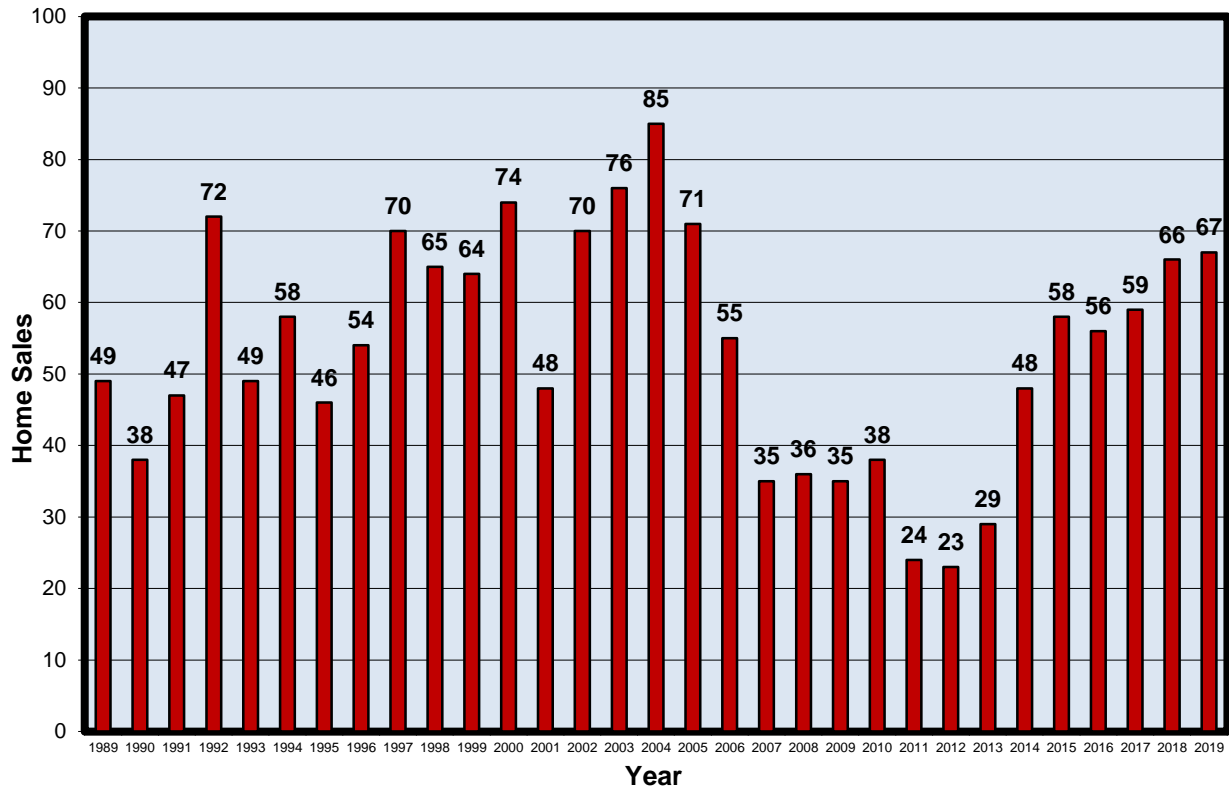
Figure 10 shows the number of homes built by decade in Bethlehem as provided by the 2014-2018 ACS. As shown in the figure, Bethlehem has a mix of newer and older housing, as 45% of the homes were built after 1980. Nearly three-quarters of the housing stock was built from 1970-2010. Of the decades shown, Bethlehem had the largest number of homes built in the 1970s, which is 26% of the housing stock and corresponds to the sizable population gain in Bethlehem (+119.9%) shown previously in Table 1.



Home Sales

In Figure 11, the number of annual home sales in Bethlehem is shown from 1989-2019. The information was retrieved from the Monmouth County Tax Board database, which possesses tax records and home sales for all municipalities in the state. “Paper sales,” which are sales between members of the immediate family for a low price (e.g., \$1 or \$100) and result in a change in title but often not a change of the occupant, were excluded from the totals below. Sales peaked at 85 in 2004 before declining to 23 in 2012 due to the housing market crash and banking crisis. Since then, home sales have steadily increased. However, the number of sales in 2019 (67) is still below the peak total that occurred in 2004.

Figure 11
Bethlehem Township Home Sales
1989-2019



Enrollment Projections

In two separate projections, enrollments were calculated from 2021-22 through 2025-26, a five-year period.

Self-contained special education/ungraded enrollments were computed by calculating the historical proportion of self-contained special education/ungraded students with respect to the regular education PK-8 subtotals and multiplying that value by the future regular education PK-8 subtotals. The average proportions from the last five years (0.0139) and six years (0.0125) were used to estimate the future number of self-contained special education/ungraded students in the respective projections. Pre-kindergarten children with special needs were included in these totals.

With respect to grade-level pre-kindergarten students, enrollment was projected by computing an average based on historical data from the last three years and using this value throughout the five-year projection period. In the last three years, pre-kindergarten enrollment has ranged from 13-22 students per year. It was estimated that there would be 17 students in the program annually in the future.

Since the birth-to-kindergarten survival ratios have been inconsistent in recent years, the average survival ratios utilized will provide a range of the potential kindergarten counts. In the first projection, a three-year average birth-to-kindergarten survival ratio (1.2042) was used instead of the five-year average, while the six-year average birth-to-kindergarten survival ratio (1.3195) shown previously in Table 4 was used in the second projection.

On September 10, 2010, former New Jersey Governor Chris Christie signed into law the Interdistrict School Choice Program (“Choice”), which took effect in the 2011-12 school year. This enables students the choice in attending a school outside their district of residence if the selected school is participating in the Choice program. The Choice district sets the number of openings per grade level. The Bethlehem Township School District does participate in the program. However, according to information on the NJDOE website⁵, the district is not accepting new Choice students for the 2021-22 school year. Choice students who have been attending schools in the district are reflected in the historical enrollment counts shown previously in Table 3.

As part of the School Funding Reform Act of 2008 (“SFRA”), all school districts in New Jersey are to provide expanded Abbott-quality pre-school programs for at-risk 3- and 4-year olds as outlined in N.J.A.C. 6A:13A. The State of New Jersey intends to provide aid for the full-day program based on projected enrollment. School districts categorized as District Factor Group⁶ (“DFG”) A, B, and CD with a concentration of at-risk pupils equal to or greater than 40 percent, must offer a pre-school program to all pre-school aged children regardless of income, known as “Universal” pre-school. For all other school districts, a pre-school program must be offered only

⁵ Retrieved from https://www.nj.gov/education/choice/districts/hunterdon/bethlehem_twp_sd.shtml on October 28, 2020.

⁶ Introduced by the New Jersey Department of Education in 1975, DFG provides a system of ranking school districts in the state by their socio-economic status. While the system is no longer used, the number of pre-kindergarten students was determined by the former DFG rankings.

to at-risk children, known as “Targeted” preschool. School districts may educate the pre-school children in district, by outside providers, or through Head Start programs. School districts were required to offer these programs to at least 90% of the eligible pre-school children by 2013-14.

Due to budgetary constraints, the NJDOE postponed the roll-out of the program, which was scheduled for the 2009-10 school year. According to a recent conversation with Ms. Karin Garver, Educational Program Development Specialist in the NJDOE Early Childhood Education, there are no plans in the imminent future by the State Legislature to fund the program, which would prevent school districts from implementing the program. The pre-school program would have been rolled out over a five-year period according to the following schedule:

- At least 20% of the eligible pre-school universe in Year 1
- At least 35% of the universe in Year 2
- At least 50% of the universe in Year 3
- At least 65% of the universe in Year 4
- At least 90% of the universe in Year 5

The universe of pre-school children in “Universal” districts is computed by multiplying the 1st grade enrollment in 2007-08 by two. The universe of pre-school children in “Targeted” districts is computed by multiplying the 1st grade enrollment in 2007-08 by two and then multiplying by the percentage of students having free or reduced lunch in the district. The Bethlehem Township School District is a “Targeted” district since its DFG is “I” with a concentration of at-risk pupils less than 40 percent (2.23%). In Table 8, the number of total eligible pre-school students is provided with the estimated five-year rollout. For the purpose of this study, it has been assumed that the district would educate its pre-school children in-house. As the table shows, there is the potential for only three (3) pre-kindergarten students as a result of the SFRA, which would have little impact on the district. Since it is unclear if and when the program will be funded and subsequently mandated, the forthcoming enrollment projections do not include additional pre-kindergarten students from the SFRA.

Table 8
Estimated Number of Eligible Pre-School Students
as Per School Funding Reform Act of 2008

DFG (2000)	Total eligible	Year 1	Year 2	Year 3	Year 4	Year 5
I	3	1	1	2	2	3

Source: New Jersey Department of Education, Division of Early Childhood Education

In a different pre-school initiative, the administration of Governor Phil Murphy announced the availability of Preschool Education Expansion Aid (“PEEA”) in 2018. In September 2018, the first round of funding (\$20.6 million) was publicized, where 31 districts received aid to expand their pre-kindergarten programs. A second round of funding was announced in January 2019, providing 33 additional school districts with roughly \$27 million in funding. The second round targeted districts whose free and reduced lunch percentage was

above 20% and who have not previously received State preschool aid. Some districts that were eligible to apply for PEEA would fall under the “Universal” category under SFRA while others would be considered “Targeted” districts. However, the main difference with this expansion aid is that districts under SFRA were restricted to serve low-income children where now districts can educate all pre-school age children through PEEA. It appears that the Murphy administration may be moving towards a pre-school program for all children, rather than just for those who are low-income. The Bethlehem Township School District did not receive a PEEA grant in either the first or second round of funding and therefore has no bearing on the outcome of this study.

Projected PK-8 enrollments, using cohort-survival ratios based on historical data from the last five years, follow in Table 9 and Figure 12. Enrollments are projected to be fairly stable throughout the projection period, ranging from 342-346. Enrollment is projected to be 344 in 2025-26, which would be a gain of 14 students from the 2020-21 enrollment of 330.

Table 9
Projected Enrollments (PK-8)
Using Cohort-Survival Ratios and 5 Years of Historical Data
2021-22 to 2025-26

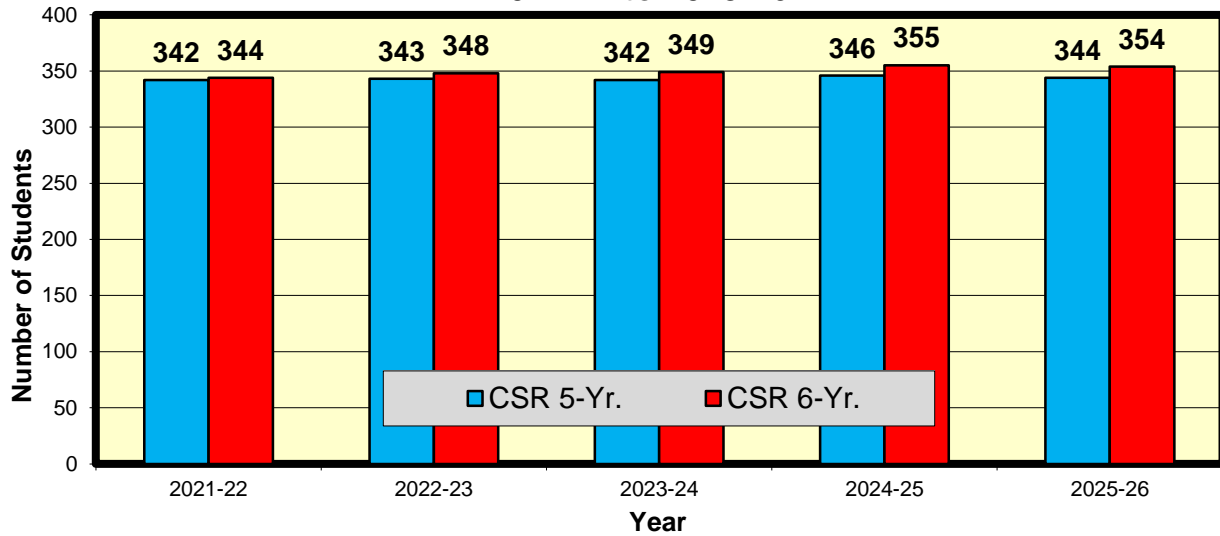
Year	PK	K	1	2	3	4	5	6	7	8	SE	PK-8 Total
2021-22	17	36	32	27	21	36	42	43	39	44	5	342
2022-23	17	37	36	34	27	23	37	43	44	40	5	343
2023-24	17	30	37	39	34	29	24	38	44	45	5	342
2024-25	17	40	30	40	38	37	30	25	39	45	5	346
2025-26	17	35	40	32	39	41	38	31	26	40	5	344

Projected PK-8 enrollments, using cohort-survival ratios based on historical data from the last six years, follow in Table 10 and Figure 12. Enrollments are projected to slowly increase throughout the projection period. Enrollment is projected to be 354 in 2025-26, which would be a gain of 24 students from the 2020-21 enrollment.

Table 10
Projected Enrollments (PK-8)
Using Cohort-Survival Ratios and 6 Years of Historical Data
2021-22 to 2025-26

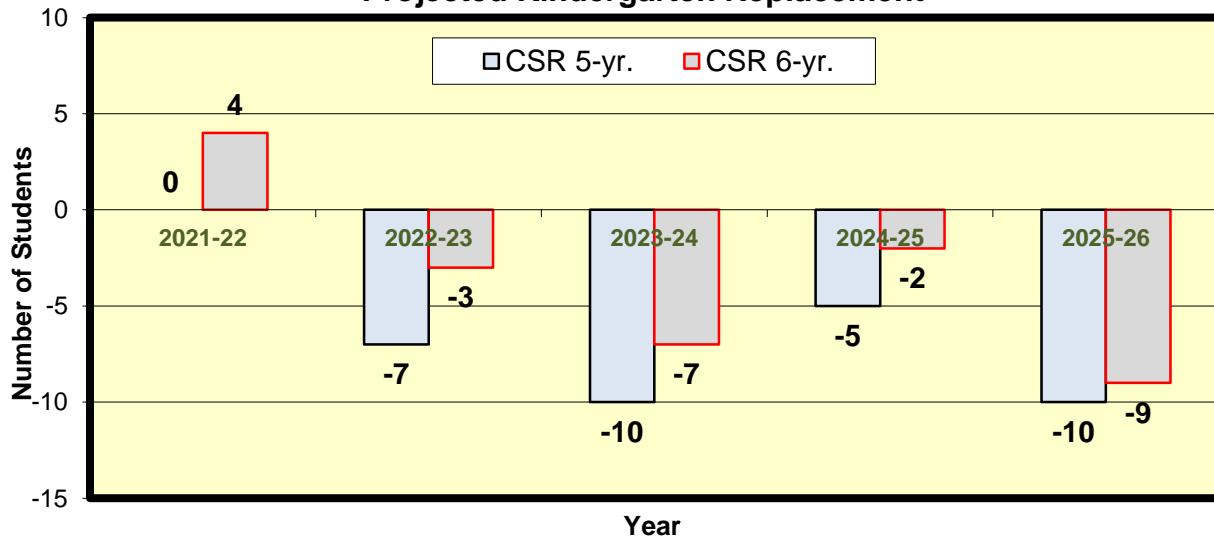
Year	PK	K	1	2	3	4	5	6	7	8	SE	PK-8 Total
2021-22	17	40	31	27	21	35	43	43	39	44	4	344
2022-23	17	41	39	33	27	22	36	44	45	40	4	348
2023-24	17	33	40	41	33	29	23	37	46	46	4	349
2024-25	17	44	32	43	41	35	30	24	38	47	4	355
2025-26	17	38	43	34	43	44	36	31	25	39	4	354

Figure 12
Bethlehem Township School District Enrollment Projections
2021-22 to 2025-26



With the exception of 2021-22, negative kindergarten replacement is expected to continue to occur in the future as shown in Figure 13. However, the magnitude of the negative kindergarten replacement is projected to be much lower than the district has experienced historically. In the first projection, negative kindergarten replacement is projected to range from 5-10 students per year while range from 2-9 students per year in the second projection. These values would be lower than the five-year average for negative kindergarten replacement that occurred from 2016-17 to 2020-21 (-22).

Figure 13
Bethlehem Township School District
Projected Kindergarten Replacement



Projected Enrollments by Grade Configuration

In Table 11, projected enrollments are shown by the district's current grade configuration (PK-6 and 7-8). Ungraded special education students were reassigned into each of the grade configurations.

For grades PK-6 at Conley, enrollment is projected to slowly increase throughout the projection period. In the first projection using CSR based on five years of historical data, enrollment is projected to be 278 in 2025-26, which would be a gain of 27 students from the 2020-21 enrollment of 251. In the second projection using CSR based on six years of historical data, enrollment is projected to be 290 in 2025-26, which would be a gain of 39 students from the 2020-21 enrollment.

For Hoppock (grades 7-8), enrollment is projected to be fairly stable for the first four years of the projection period before declining in the last year. The CSR method based on five years of historical data is projecting enrollment to be 66 in 2025-26, which would represent a loss of 13 students from the 2020-21 enrollment of 79. The CSR method based on six years of historical data is projecting enrollment to be 64 in 2025-26, which would be a loss of 15 students from the 2020-21 enrollment.

Table 11
Projected Enrollments for Grades PK-6 and 7-8
for Each Projection Method

Historical	PK-6		7-8	
2020-21	251		79	
Projected	PK-6 CSR 5-YR	PK-6 CSR 6-YR	7-8 CSR 5-YR	7-8 CSR 6-YR
2021-22	259	261	83	83
2022-23	259	263	84	85
2023-24	253	257	89	92
2024-25	262	270	84	85
2025-26	278	290	66	64
5-year Change	+27	+39	-13	-15

Capacity Analysis

Table 12 shows the educational capacities of the schools in the Bethlehem Township School District in comparison to both the current enrollments in 2020-21 and the enrollment projections in the 2025-26 school year. As the district plans to close Hoppock and construct additional classrooms at Conley, the table assumes that the new construction will occur and that Hoppock will close in the near future. With 11 additional classrooms at Conley, it is estimated that there will be an additional 231 seats in the building, raising its capacity to 558. Using the building capacities, the differences between capacity and current/projected number of students were computed. It was assumed that Hoppock would be closed by 2025-26 and all students would attend Conley. Positive values indicate available extra seating while negative values indicate inadequate seating (also known as “unhoused students”). It should be noted that the capacity values are not fixed and can change from year-to-year based on classroom usage. For instance, additional special education classes in a building would reduce the building capacity. On the other hand, districts with unhoused students can accommodate these children by increasing class sizes, which in turn increases the school’s capacity. As such, the capacity of a school is not a fixed value and can be changed depending on how the building is used.

While there were two sets of projections, only the highest projection is shown. At Conley and Hoppock, there is currently a surplus of seating, with the largest being at Hoppock (+232). By 2025-26, with Hoppock assumed to be closed, it is anticipated that there will be 204 surplus seats at Conley assuming the building additions have been completed.

Table 12
Capacity Analysis

School	Existing Capacity ¹	Current Enrollment 2020-21	Difference	Proposed Capacity ²	Projected Enrollment 2025-26	Difference
Thomas B. Conley Elementary School (PK-6)	327	251	+76	558	354	+204
Ethel Hoppock Middle School (7-8)	311	79	+232	N/A closed		

Notes: ¹FES Capacity from the Bethlehem Township School District architect, Design Resources Group Architects, AIA, Inc.

²Eleven additional classrooms are proposed at 21 students per classroom, which would yield 231 additional seats.